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OR

WEEKLY ABSTRACT OF GENERAL KNOWLEDGE.

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NATURAL HISTORY.

[*Continued.*]

THE SENSES are those faculties or powers by which external objects are perceived. The *sight*, *touch*, or feeling, *hearing*, *smell*, and *taste*, are called the *senses*. The organs through which they operate are the following:—

The EYE is the organ of *seeing*. The eye-lids, the eye-lashes, and the eye-brows, require no particular description. The eye-ball is of a globular figure; it is composed of various membranes; but those parts of the eye deserving the most notice, are the *iris*, the *pupil*, and the *retina*. The iris is that colored circular ring situated beneath the *crystalline lens*, which surrounds the central or dark part called the *pupil*. It is capable of expanding or contracting, which it constantly does, according to the quantity of light which is thrown upon the eye. In a very bright light, the pupil is reduced by the contraction of the iris to a very narrow hole; in a dark place, the pupil is so much enlarged as to render this iris scarcely visible. The *pupil* is the dark, round opening in the middle of the eye, surrounded by the iris, through which the rays of light pass to the *retina*, which is the true organ of vision, and is formed by the expansion of the pulp of the optic nerve. Externally, the globe of the eye and the transparent *cornea* are moistened by a fluid called the *tears*, which are secreted in the lachrymal glands, one of which is situated above each inner corner of the eye. In proportion as the eye is more or less round, is the sight of a person longer or shorter. Persons of short sight are called *myopes*, of long sight *presbyopes*.

TOUCH or FEELING resides in every part of the body that is supplied with nerves. The sense of touch is most exquisite in the lips, the tops of the fingers, the tongue, and a few other places.

The EAR is the organ of *hearing*. In man, it consists of an external ear, or auricula, and an internal bony cavity, with numerous circular and winding passages, by which the vibrations of the air are collected and concentrated, and by a peculiar mechanism, conveyed to the auditory nerves. The ear is supplied with peculiar glands, which secrete an unctuous substance called the wax of the ear. The external auditory passage proceeds in a spiral direction to the *tympanum*, or drum of the ear, which forms a complete partition between this passage and the internal cavities. Beyond the tympanum is an hemispherical cavity which leads to the *fauces*, or opening at the back of the mouth: this opening is of a trumpet form. The inner cavity, including the winding passage, is aptly called the *labyrinth* of the ear. The *sense of hearing* is perhaps still more important than that of *seeing*; but as we can have no just conception of the real state of social existence without either of these senses, it is idle to speculate on such comparisons.

The NOSE is, in man and most of the superior animals the organ of *smelling*. It is true, the nerves of the nose are considerably expanded over the nostril, and are defended from external injuries by a peculiar mucus; but it is very difficult to ascertain what are the essential organs of smelling. The *nostrils* are two passages of the nose which communicate interiorly with the upper part of the mouth. The use of the nostrils is for smelling, respiration, and speech. The nose is an important part of the human countenance; it is considered in almost all countries as one of the features to which peculiar merit is attached.

The TASTE resides chiefly in the *tongue*, in conjunction with the palate, lips, and other parts of the mouth. The tongue is however destined to perform much more varied and important functions than that of conveying to the mind the taste of sapid bodies. It is the tongue, in conjunction with the lips, teeth, palate, and throat, which produces the sound of *language*. The tongue is partly muscular, and partly composed of membranes and cellular substance. Its upper side is covered with *papillæ*, in which the taste more immediately resides. The impression of sapid bodies on the organs of taste is modified by age, size, habit, and the more or less frequent application of strong stimulants. The state of the stomach, as well as general health, is often indicated by the state and colour of the tongue. In health, the tongue is always of a red colour; in disease, it varies from white to yellow, and sometimes is almost black. In health, the tongue is always more or less moist; in disease, frequently parched and dry: this last condition is, however, produced by the mere absence of moisture, evinced by the sensation we call *thirst*.

The SEXES differ by obvious indications; but there are some not so universally recognised, which we may mention. The male is generally of a larger size than the female, and more robust; the male becomes frequently bald on the top of the head, the female rarely or never; the male has always more or less *beard*, the female rarely any, except as old age approaches, and then it is chiefly confined to the upper lip. The anatomical differences, besides the obvious ones, are, in the female, a larger pelvis than in the male, more delicate muscles and smaller bones; and the phrenologists say that the female skull is more elongated than the male, from the protuberance in the middle of the back part of the skull, (which they denominate *philo progenitiveness*, or love of children,) being more prominent. The mental difference of the two sexes are also important; women appear to possess more imagination and less judgment than men; these differences are unfortunately too often widened by mistakes in the education of the female mind.

EARTHQUAKES.

EARTHQUAKES IN SICILY AND IN THE TWO CALABRIAS.

THESE earthquakes began on the 5th of February, 1783, and continued until the latter end of the May following, doing infinite damage, and exhibiting at Messina, in the parts of Sicily nearest to the continent, and in the two Calabrias, a variety of phenomena. The part of the Calabrian provinces most affected by this heavy calamity, lies between the thirty-eighth and thirty-ninth degree of latitude, being the extreme point of the continent; and the greatest force of the earthquakes was exerted at the foot of the particular mountains of the Appenines, named Monte Deio, Monte Sacro, and Monte Caulone, extending westward to the Tyrrhene

sea. The towns, villages, and farm-houses nearest to these mountains, whether situated on the hills or in the plains, were totally ruined by the first shock, which happened about noon; and there the destruction of lives was the greatest. The towns still more remote were, however, greatly damaged by the subsequent shocks, particularly those of the 7th, 26th, and 28th of February, and that of the 1st of March. The earth was in a constant tremor, and its motions were various, being either vortical, horizontal, or oscillatory. This variety increased the apprehensions of the unfortunate inhabitants, who momentarily expected that the earth would open beneath their feet, and swallow them up. The rains had been continual and violent, often accompanied by lightning and furious blasts of wind. There were many openings and cracks in the earth; and several hills had been lowered, while others were quite level. In the plains, the chasms were so deep that many roads were rendered impassable. Huge mountains were severed, and portions of them driven into the vallies, which were thus filled up. The course of several rivers was changed, and many springs of water appeared in places which had before been perfectly dry.

In one place near Laureano, two tracts of land, situated in a level valley, were transported to the distance of a mile, with all their trees and olives still standing; and volumes of hot water and sand issued from the ground where they formerly stood; and two others, on which a part of the city of Polistena was built, were moved nearly across a contiguous ravine to about half a mile from their former position, with some hundreds of houses on them, and many of the inhabitants, several of whom were extricated from the ruins alive and unhurt!*

FISSURE NEAR POLISTENA.

Near Seminara, a large olive ground was precipitated to a distance of two hundred feet into a valley sixty feet in depth, and this so compactly as to leave uninjured a house with its inhabitants that stood on it, and the olive trees continued to grow, and bore an abundant crop the same year in their new situation.

The permanent chasms or ravines caused by this earthquake were of great size; one in the district of Plaisano, was a mile long, 105 feet broad, and 30 feet deep; another three quarters of a mile long, 150 feet broad, and above 100 feet deep; another was no less than 225 feet deep; one gulf at Fosolano measured 300 feet square; and another, about 750 feet square, and about 30 feet deep. A mountain at the southern part of the peninsula was cloven for the length of nearly half a mile, the opening being of an irregular breadth of many feet.

CIRCULAR HOLLOWS IN THE PLAINS OF ROSARNO

From the city of Amantea, situated on the coast of the Tyrrhene Sea, in lower Calabria, proceeding along the western coast to Cape Spartivento, in Upper Calabria, and thence along the eastern coast to Cape Alice, a part of Lower Calabria, on the Ionian Sea, the towns and villages, amounting to nearly four hundred, whether on the coast or inland were either totally destroyed, or suffered greatly. At Casal Nuovo, the Princess Gerace and upwards of four thousand of the inhabitants lost their lives. At Bagnara, the number of dead amounted to upwards of three thousand; and Radicina and Palmi experienced a similar loss. The total amount of the mortality occasioned by these earthquakes in Sicily and the two Calabrias, was, agreeably to the official returns, thirty-two thousand three hundred and sixty-seven; but Sir William Hamilton thought it still greater, and carries his estimate to forty thousand, including foreigners.

Along the sea-coast of the straits of Messina, near the classical rocks of Scylla, the huge masses detached from the lofty cliffs overwhelmed many villas; the water, as usual, was violently agitated, and showed that the subterranean motion was not less active beneath the bed of the sea than on shore. The prince of Scylla, an old man, on the occurence of the first shock, observing the effects produced on the cliffs, on which his own castle and the houses of the town were situated, advised the inhabitants to get boats ready, and to assemble on the shore, to be ready to escape in them, if another shock should bring down the rock above them. They took his advice, and collected together on the shore accordingly. By the first shock, the sea had been raised and agitated so violently, that much damage had been done on the point of the Faro of Messina; but here it acted with still greater violence; for, during the night, an immense wave, which was falsely represented to have been boiling hot, and to have scalded many persons on its rising to a great height, flowed furiously three miles inland, and swept off in its return two thousand four hundred and seventy-three of the inhabitants, with the prince at their head, who were either at that time on the strand, or in boats near the shore.

The shocks felt since the commencement of these formidable earthquakes amounted to several hundreds; and among the most violent may be reckoned the one which happened on the 28th of March. It affected most of the higher part of Upper Calabria, and the inferior part of Lower Calabria, being equally tremendous with the first. Indeed, these shocks were the only ones

* Sir William Hamilton, who wrote the most complete account of this earthquake, and from whose paper in the *Philosophical Transactions* these events are copied, afterwards spoke to one of these survivors, who, with his maid-servant and wife, were extricated; the former unhurt, but the latter, as the man said, "a *little so*, but she was then nearly recovered." On Sir William's asking him the nature of the injury his wife had received, he said, "she had both her legs and one arm broken, and her skull so fractured that the brain was visible!"

sensibly felt in the capital, Naples. With relation to the former, two singular phenomena are recorded. At the distance of about three miles from the ruined city of Oppido, in Upper Calabria, was a hill having a sandy and clayey soil, nearly four hundred feet in height, and nearly nine hundred feet in circumference at its basis. This hill is said to have been carried to the distance of about four miles from the spot where it stood, into a plain called *Campo di Bassano*. At the same time, the hill on which the city of Oppido stood, and which extended about three miles, divided into two parts: being situated between two rivers, its ruins filled up the valley, and stopped their course, forming two large lakes, which augmented daily.

ERUPTION OF THE TOMBORO MOUNTAIN IN JAVA.

The most extraordinary convulsions of Vesuvius and Ætna, as they appear in the descriptions of the poet, or the more authentic accounts of the naturalist, bear no comparison in point of duration or force with this eruption in the Indian Archipelago, April 5, 1815. It extended perceptible evidence of its existence over the whole of the Molucco islands, over Java, a considerable portion of Celebes, Sumatra, and Borneo, to a distance of 1,000 statute miles from its centre, by tremulous motions and reports of explosions; while within the range of its more immediate activity, embracing a space of more than 300 miles around it, it produced the most astonishing effects, and excited the most alarming apprehensions. On Java, at the distance of more than 300 miles, it seemed to be awfully present. The sky was overcast at noonday with clouds of ashes; the sun was enveloped in an atmosphere whose "palpable" density he was unable to penetrate: showers of ashes covered the houses, the streets, and the fields to the depth of several inches; and amid the darkness, explosions were heard at intervals like the report of artillery, or the peals of distant thunder. So fully did the resemblance of the noises to the reports of cannon impress the minds of some officers, that, from an apprehension of pirates on the coast, vessels were despatched to afford relief. Superstition, on the other hand, was busily at work on the minds of the natives, and they attributed the reports to an artillery of a different description from that of pirates. The first explosions were heard on the 5th of April; a fall of ashes took place on the 6th; from that day the sun became obscured, and apparently enveloped in fog till the 12th. On the 11th, the explosions were tremendous, and shook the houses on the eastern part of Java. Candles were obliged to be lighted at four in the afternoon. The ground in some places was covered with ashes to the depth of eight inches. The darkness of the atmosphere, and occasional falls of volcanic ashes, continued till the 17th of April. From Sambawa, where the eruption took place, to the part of Sumatra where the sound was noticed, is a distance of 970 geographical miles, and clouds of ashes so dense as to create utter darkness at noonday were experienced more than 300 geographical miles from the centre of its operations. The explosions did not cease entirely on the island of Sambawa till the 15th of July. Of all the villages of Tomboro, one only remained, containing about forty inhabitants. In Pekate, no vestige of a house was left; and twenty-six of the inhabitants, who were at Sambawa at the time, were the only part of the population who escaped. There were not fewer than 12,000 individuals in Tomboro and Pekate at the time of the eruption, of whom only five or six escaped. The trees and herbage of every description along the whole of the north and west sides of the peninsula were completely destroyed, with the exception of one point of land near the spot where the village of Tomboro stood.

Cabinet of Curiosities.

THE CUMBERLAND CAVERN.

To the west and north-west of the village of Matlock are three apertures in the rock, respectively named the Cumberland, Smedley, and Rutland Caverns. The former of these is well deserving of a short notice.

The entrance is partly artificial, to afford a greater facility to the visiter, who has to descend fifty-four steps The cavern now opens on him in solitary grandeur. Huge mases of stone are piled on each other with a tremendous kind of carelessness, evidently produced by some violent concussion, though at an unknown period. He is conducted to a long and wide passage, the roof of which has all the regularity of a finished ceiling, and is bespangled by spars of various descriptions. From above, from beneath, and from the sides, the rays of the lights are reflected in every direction. In an adjacent compartment, rocks are heaped on rocks in terrible array, and assume a threatening aspect. Next is an apartment decorated with what, in the language of the country, is called the *snow fossil*—a petrifaction which, both in figure and color, resembles snow, as it is drifted by the winter storm into the cavities of a rock. Near the extremity of the cavern are to be seen fishes petrified and fixed in the several strata which form the surrounding recess. One of these has its back *jutting out* of the side of the earth, as if it had been petrified in the act of swimming. In another branch of the cavern, a well has been found of a considerable depth.—*Wonders of the World.*

THREE LEGGED RABBITS.

We have this week, through favor of Mrs. Ridler, of the Lower George Inn, in this city, visited a litter of rabbits of most extraordinary deformity, consisting of *ten* in number, two only of which are perfect; two have no ears, two but one ear each, two have only three legs each, and two others are blind. They are all living.—*Gloucester Herald.*

ASTRONOMY.

URANUS OF HERSCHEL.

The people of the continent of Europe commonly called this planet *Uranus;* but in England and America it has been more common to call it *Herschel.* It was discovered to be a planet by Dr. Herschel of England, in the year 1781. Many others had previously seen it, but they supposed it to be a fixed star.

Uranus is the most distant from the Sun of all the planets that we can see. Its distance is 1800 millions of miles, which is twice as far as Saturn, and nineteen times as far as the Earth.

One revolution of this remote planet round the Sun requires 84 of our years. If its inhabitants do not live longer than those of our earth, few of them live to be a year old. The length of their day is unknown.

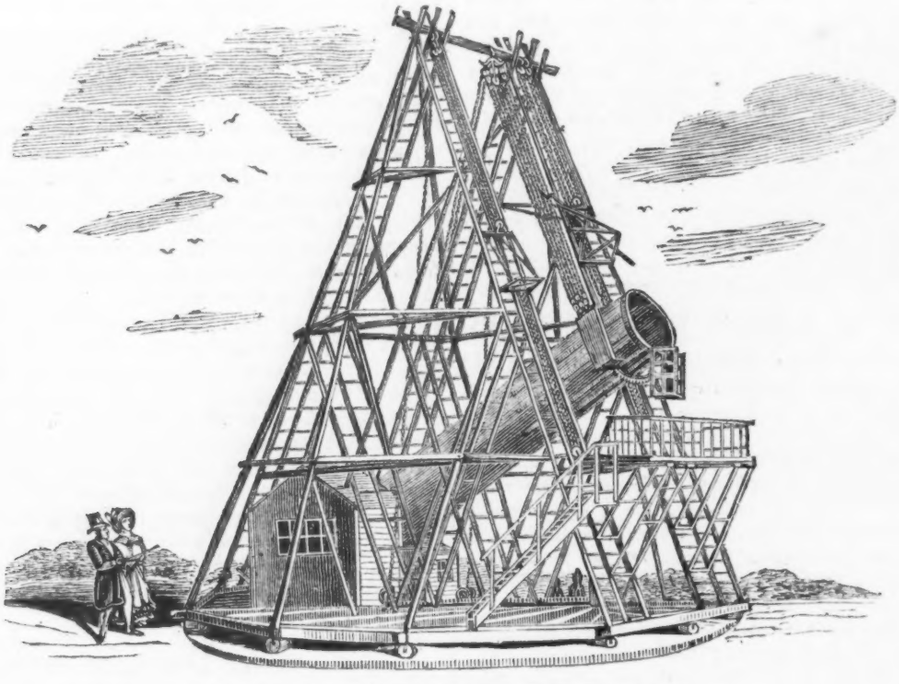
The diameter of Uranus is 35,000 miles. It is therefore the third planet in size, and is 80 times the size of the earth. Six moons revolve round Uranus, but they are so far from us that we can know little of them.

The immense distance of Uranus from the Sun would lead us to think that it must be very dark and cold. But the people may receive more heat and light from the Sun than we are aware of, and they may have better means than we know of for producing light and heat. Their eyes may be fitted to see where we could not; and their bodies may not be so easily affected by the cold. So also, there are some vegetables that will not grow where the climate is very hot; and others cannot bear the cold.

We have now described all the planets that we are acquainted with. There may be others so small or so distant that we cannot see them with our telescopes. Five of those which we now know have been discover-

ed since the year 1780; and if further improvements should be made in the telescope, others may perhaps be seen.

It would not be out of place to introduce here a description of the wonderful instrument with which Herschel made his important astronomical discoveries.



HERSCHEL'S FORTY FEET TELESCOPE.

THIS celebrated "wonder of science" was constructed by Sir W. Herschel, in his grounds at Slough, near Windsor. Its proportions were prodigious:—The length of the tube is thirty-nine feet four inches, it measures four feet ten inches in diameter, and every part of it is of rolled or sheet iron, which has been joined together without rivets, by a kind of seaming well known to those who make iron funnels for stoves. The concave face of the great mirror is forty-eight inches of polished surface in diameter! The thickness, which is equal in every part of it, is about three inches and a half, and its weight when it came from the cast was 2,118 pounds, of which it must have lost a small part in polishing. The method of observing by the telescope is by what Herschel called the front view; the observer being placed in a seat suspended at the end of it, with his back towards the object he views. There is no small speculum; but the magnifiers are applied immediately to the first focal image. From the opening of the telescope near the place of the eye-glass, a speaking-pipe runs down to the bottom of the tube, where it goes into a turning-joint; and after several other inflexions, it at length divides into two branches, one going into the observatory, and the other into the work-room; and thus the communications of the observer are conveyed to the assistant in the observatory, and the workman is directed to perform the required motions. The foundation of the apparatus by which the telescope is suspended and moved, consists of two concentric circular brick wells, the outermost of which is twenty-two feet in diameter, and the inside one twenty-one feet. They are two feet six inches deep under ground, two feet three inches broad at the bottom, and one foot two inches at the top, and are capped with paving stones, about three inches thick, and twelve and three quarters broad. The bottom frame of the whole rests upon these two walls by twentry concentric rollers, and is movable upon a pivot, which gives a horizontal motion to the whole apparatus, as well as to the telescope.—*Cabinet of Curiosities.*

We have already treated to some extent on the subject of Comets. Before leaving it, however, and stretching off to the confines of the universe, it would be proper more fully to consider it. For Comets may be regarded as the connecting link between solar systems; hence it is in order to notice them before leaving our own.

The cut on the next page is a representation of the course of the Comet Biela, whose expected appearance not long since excited such intense interest. The part of the heavens in which it is here seen moving, is denominated the constellation Leo; which leads us to a particular description of it in this place.

THE CONSTELLATION LEO, THE LION.

THE LION is with the moderns, as with the ancients, a symbol of the month of July, and was placed among the Egyptian hieroglyphics to represent their hot season. The Greek poets tell us this sign was the *Nemean Lion* that dropped from the Moon, and was slain by HERCULES, and was afterwards elevated to the heavens by JUNO.

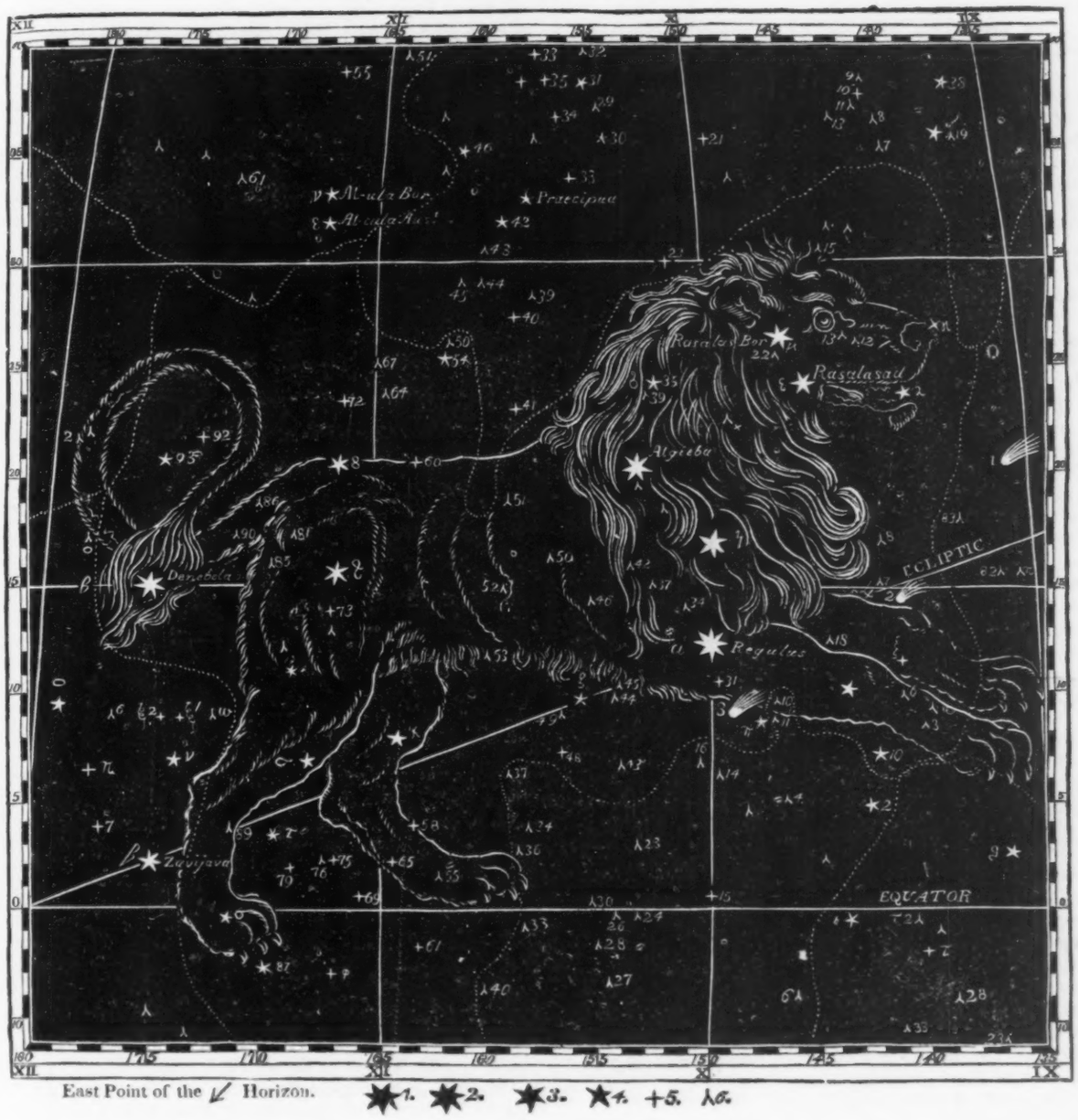
This constellation is remarkable for its many bright stars, and is easily discovered by its being seated south of the *Great Bear*.

In the western part of this constellation is a beautiful star of the first magnitude called *Regulus* or *Kelb*, near the heart of the LION; a little above this are four bright stars forming the neck and head; on the hind quarters are two stars of the third magnitude; and in the tail a star of the second magnitude, called *Denebola*, forming a triangle with the two former.

LEO contains *one* star of the *first* magnitude, *two* of the *second*, *five* of the *third*, *eleven* of the *fourth*, *fourteen* of the *fifth*, and *forty-three* of the *sixth*. Regulus is situated on the ecliptic. This star is sometimes called *Cor Leonis* (the *Lion's Heart.*)

The constellation LEO is chiefly situated north of the ecliptic, passing over the countries situated in the north part of the Torrid Zone, where this animal is generally found; in Zoology, it is a species of *Felis*, or cat kind, and considered the most ferocious of quadrupeds. Many extraordinary accounts are reported of the animal. (See plate.)

THE COMET, IN CONSTELLATION LEO.



East Point of the ↙ Horizon.

MAGNITUDES.

THE above engraving represents the beautiful constellation LEO, the *Lion*, and also shows a portion of the *path* of the periodical COMET discovered on the 27th of February, 1826, by M. Biela, of Josephstadt.

The above Comet performs its revolution round the Sun in about six years and three quarters.

This is the Comet concerning which such dire forebodings were entertained on the continent, many individuals firmly believing that in 1832 it would come in contact with the EARTH, and prove its destruction. This alarm appears to have originated in Paris, which seems especially accessible to these terrific apprehensions.

CONJECTURES AND CONCLUSIONS RESPECTING COMETS.—Of all the celestial bodies, there are none that have given rise to so many speculations and conjectures as the COMETS. Their strange appearances, in all ages, have been matter of terror to the vulgar, who uniformly have looked upon them as bad omens, and forerunners of war, pestilence, &c. Others less superstitious supposed them to be meteors raised in the higher regions of the air.

Some part of the modern doctrine concerning them, however, was received into the ancient *Italic* and *Pythagorean schools*; for they held them to be so far of the nature of planets, that they had their periodical times of appearing; that they were out of sight for a long time, while they were carried aloft at an immense distance from the EARTH, but became visible when they descended into the lower regions of the air, and thus were nearer to us.

ARISTOTLE, however, maintained, that they were nothing more than *meteors*, or exhalations raised into the upper regions of the atmosphere, where they blazed out for a while, and disappeared when the matter of which they were formed was consumed. SENECA, on the contrary, strongly argued against those who supposed them meteors, and declared his belief that they were not fire suddenly kindled, but the eternal productions of NATURE. He points out, also, the only way to come at a certainty on this subject, viz. by collecting a number of observations concerning their appearance, in order to discover whether they return periodically or not. "For this purpose," says he, "one age is not sufficient; but the time will come when the nature of Comets and their magnitudes will be demonstrated, and the routes they take, so different from the planets, explained. Posterity will then wonder that the preceding

ages should be ignorant of matters so plain and easy to be known.

The prediction of SENECA, however, seemed for a long time very unlikely to be fulfilled. The great authority which ARISTOTLE maintained for many ages, determined them to be nothing but meteors casually lighted up in the air; though they were manifestly at a great height, not only above the clouds, but subject to the diurnal revolution of the Earth. In the dark and superstitious ages, they were held to be the harbingers of *every kind of calamity*,* and were supposed to have different degrees of malignity according to the shape they assumed; from whence also they were differently denominated. Thus, some were said to be *bearded*, some *haired;* some to represent a *bean*, a *sword*, or a *spear;* others a *target*, &c.; whereas, modern astronomers acknowledge only one species of Comets, and account for their different situations and distances from the Sun and Earth.

Long did astronomers maintain many absurd opinions concerning them. The first astronomer who placed them in their true rank in the creation was TYCHO BRAHE; but the first who discovered their true motion was Sir ISAAC NEWTON, from the observations he made on the great Comet of 1680. This descended almost perpendicularly towards the Sun with a prodigious velocity; ascending again with a motion retarded, as much as it had been before accelerated. It was seen in the morning by a great number of astronomers in different parts of Europe, from the 4th to the 25th of November, on its way towards the Sun; and in the evening, from the 12th of December to the 9th of March following. The many exact observations made on this Comet, enabled Sir Isaac Newton to determine that they are a kind of planets, which move in very eccentric ellipses; and this opinion is now considered as an established truth; and further, that they are opaque bodies, enlightened by the Sun.

Comets are of very different magnitudes, which may be conjectured from their apparent diameter and brightness. The TAILS of COMETS have given rise to various conjectures; though it is acknowledged by all that they depend on the Sun in some way or other, as they are always turned from him, but in what manner this is accomplished we cannot easily determine. Sir Isaac Newton was of opinion, that the *tail* of a Comet is a very thin vapour, which the head sends out by the reason of its heat. BOWRING objects to Newton's theory, from the great velocity of the Comet's motion: that of some of the Comets is said to be after the rate of no less than 880,000 miles an hour.†

With respect to the use of the Comets in the universe, it is no more a question than that of any other *Orb*. They show, by their rapid motions, and the period of the revolutions of those which have been calculated, the vast extent of the starry firmament. With respect to their situation, whether belonging to the Solar System, or as links that join SYSTEMS, thereby keeping up a harmony or union of Systems, it seems more a consideration, and is perfectly consistent with the analogy and connexion that are found among objects where the researches of human sagacity have been able to penetrate.

A comet exhibits three varieties, according to its position, as seen from the Earth. I. *Bearded*, when eastward of the Sun, and its light marches before. II. *Tailed*, when westward of the Sun, and the tail or train follows it. III. *Haired*, when diametrically opposite to the Sun, having the Earth between them, and all its tail hid except a few scattered rays.

But of all the Comets on record, only four of their periods are known to any degree of certainty. The *first* of these appeared in 1592, 1707, and 1682, making a period of seventy-five years. The *second* appeared in 1532 and 1661, being a revolution of one hundred and twenty-nine years. The *third*, and most noted of all the Comets yet observed, is that before-mentioned, which appeared in 1680, and its period was calculated by Sir Isaac Newton to be 575 years; therefore it may be expected again in 2255. This Comet, at its greatest distance from the Sun, is about 11,200,000,000 of miles; and at its least distance from the Sun's centre, it is only 49,000 miles, being only about *one-third* of the Sun's semi-diameter from his surface. In that part of its orbit nearest to the Sun, it flies at the amazing rate of 880,000 miles an hour, as observed above; and the Sun, as seen from it, appears thirty thousand times larger than he does to us. The astonishing length that this Comet runs out into empty space, suggests to our minds the vast distance of the fixed stars, and hence of the UNIVERSE, where regions appear beyond regions. However difficult to narrow minds like ours to find out the destination of these orbs, this is an undoubted truth: that wherever the DEITY exerts his power, there he also manifests his wisdom and goodness.

The first Comet on record was observed by *Nicephorus Gregorius*, of Constantinople, in June, 1337, whose course he describes very accurately.

Comets do not all move from west to east, like the planets. Some have a direct and some a retrograde motion. Their orbits are not comprehended within a narrow zone of the heavens, like those of the principal planets; they vary through all degrees of inclination. There are some whose plane is nearly coincident with that of the ecliptic, and others have their planes perpendicular to it. Indeed, a slight inclination of the orbit is no longer deemed an essential characteristic even of the planets, for the small planets lately discovered have great inclinations. It may be remarked, also, in this connexion, that the orbits of the satellites of *Uranus* are nearly perpendicular to the ecliptic.

It is further to be observed, that the *Tails* of COMETS begin to appear as the bodies approach near the Sun; their length increases with this proximity; and they do not acquire their greatest extent till after passing their perihelion. Their direction is always to the Sun.

OF THE STARRY FIRMAMENT, ITS CHIEF DIVISIONS AND CONSTELLATIONS.

THE stars, on account of their apparent magnitudes, are distributed into several classes or orders. Those which appear largest to the eye are denominated STARS of the *first magnitude;* the next to them in lustre, stars of the *second magnitude;* and so in this progressive manner to those of the *sixth magnitude*, which are the smallest that are vissible to the naked eye. Those that are less than the sixth magnitude, are termed telescopic stars, because not visible without the aid of that instrument.

The whole starry firmament contains ninety-four constellations, and is commonly divided into three chief parts, as follows:—

I. The ZODIAC, which contains twelve constellations, commonly called the twelve signs of the Zodiac. The Zodiac is sixteen degrees broad.

II. All that space between the Zodiac and the north pole containing the thirty-five northern constellations.

III. The regions south of the Zodiac, containing forty-seven constellations.

A constellation is a convenient portion or number of stars which lie contiguous to one another, and for the purpose of distinction is named after some animal or object, which if there delineated would fill up that space, as it appears to the eye.

By this decision, the STARS are so distinguished from one another, that any particular star may be readily found in the heavens by means of a celestial globe or map, on which the constellations are so delineated that the most remarkable stars are placed in such parts of the figures as are most easily distinguished.

* This idea is noticed by Homer, Tasso, and Milton.

† This is the same as Newton calculated the motion of the Comet of 1680 to be.

The magnitude of the stars in the constellation is distinguished chiefly by the letters of the Greek alphabet; that is, the first letter (*a*) is placed by the largest star in the constellation, whether of the first magnitude or not; the second letter (*b*) is placed by the second in lustre; in this manner to the least star in the constellation; and if there are more stars than there are letters in the Greek alphabet, the letters of the common alphabet are introduced; and afterwards, if necessary, the numbers, 1, 2, 3, 4, &c. are added.

Some of the stars have, besides their rays and Greek letters, also names; as *Castor*, &c.—and it is much to be regretted that astronomers have not given modern names to all the considerable stars; that being to students so much simpler, and more engaging than the Greek letters.—*Guide to Knowledge.*

ANNE MOORE OF TUTBURY.

This vile impostor, who pretended she could live without food, was born at Royston, near Ashborn, in the county of Derby, in the year 1761. Her parents were poor, and of the name of Peg. At the age of twenty-seven, she married James Moore, a labourer, with whom she soon parted, after which she had two children by her master, a boy and a girl.—About the beginning of 1807, when residing at Tutbury, a village in Staffordshire, she first excited public attention by declaring she could live without food. An assertion so repugnant to reason and nature was of course rejected. She therefore offered to prove the truth of her assertion by submitting to be watched for a considerable time.

In order to satisfy the public, she was removed from her home to the house of Mr. Jackson, grocer, of the same village, and all the inhabitants were invited to join in watching her. A Mr. Taylor, surgeon, superintended the watching, which continued sixteen days during which time she was allowed a little water, on the first three days. When the watch had ended, she was removed to her own house; and Mr. Taylor published an account, declaring that she had lived for thirteen days without taking any food, liquid or solid. This account, so attested, was believed by numbers, who flocked to see her, and few visited her without leaving some proof of their credulity or pity. By this means she collected about £250.

Though the declaration of the persons who formerly watched her had obtained considerable credit, yet there were many who thought her an impostor, and demanded that she should be again watched. A committee was formed of the neighboring clergymen and magistrates, who met on Tuesday, the 20th of April, 1813; and the time it was determined she should be watched was fixed at one month, to which she was at last obliged to assent.

Her bed was filled with chaff, and the clothes examined in the presence of the committee. The watch entered on their office at two o'clock on Wednesday. She received the watchers with as much good manners as she was capable of, though she had been crying bitterly before they came. The first watch, which continued four hours, was begun by Sir Oswald Mosley and the Rev. Leigh Richmond, and followed by several other gentlemen. At the end of seven days, the public were informed that she had during that time taken no food whatever. Great confidence was now expressed by her advocates that she would endure the ordeal with credit. But when the machine for weighing her was put under the bed, it was found that she lost weight rapidly. At last, on the ninth day, she insisted upon the watchers quitting the room, declaring that she was very ill, and that her daughter must be sent for. She was now greatly reduced, and the watchers who attended her were much alarmed lest she should expire; and apprehensive of being implicated in the charge of murder, they quitted the room and admitted the daughter, who administered what she thought proper, when the mother began to recover.

One remarkable circumstance was, that on Friday, the 30th of April, after the watch broke up, she desired to take a solemn oath that she had not, during the time she was watched, taken any food whatever; which oath was administered to her. This she did in hope, notwithstanding all, still to impose upon the public. But as her clothes gave evidence against her, to her utter confusion she was brought at last to make the following confession:

"I, Anne Moore, of Tutbury, humbly asking pardon of all persons whom I have attempted to deceive and impose upon, and above all, with the most unfeigned sorrow and contrition, imploring the divine mercy and forgiveness of that God whom I have greatly offended, do most solemnly declare, that I have occasionally taken sustenance for the last six years.

"Witness my hand, this fourth day of May, 1813.

"The mark ✕ of Anne Moore."

The above declaration of Anne Moore was made before me, one of his Majesty's Justices of the Peace for the county of Stafford, Thomas Lister.

Witness of the above declaration and signature of my mother Anne Moore, Mary Moore.

This impostor was committed to prison, February, 1816, for falsely collecting money under the pretence of charity.—*Cabinet of Curiosities.*

POETRY.

THE MYSTERIOUS MUSIC OF THE OCEAN.

FROM WALSH'S NATIONAL GAZETTE.

"And the people of this place say, that at certain seasons beautiful sounds are heard from the ocean."

MAYOR'S VOYAGES.

LONELY and wild it rose,
That strain of solemn music from the sea,
As though the bright air trembled to disclose
An ocean mystery.

Again a low, sweet tone,
Fainting in murmurs on the listening day,
Just bade the excited thought its presence own,
Then died away.

Once more the gush of sound,
Struggling and swelling from the heavy plain,
Thrilled a rich peal triumphantly around,
And fled again.

O boundless deep! we know
Thou hast strange wonders in thy gloom concealed,
Gems, flashing gems, from whose unearthly glow
Sunlight is sealed.

And an eternal spring
Showers her rich colors with unsparing hand,
Where coral trees their graceful branches fling
O'er golden sand.

But tell, O restless main!
Who are the dwellers in thy world beneath,
That thus the watery realm cannot contain
The joy they breathe?

Emblem of glorious might!
Are thy wild children like thyself arrayed
Strong in immortal and unchecked delight,
Which cannot fade?

Or to mankind allied,
Toiling with wo, and passion's fiery sting,
Like their own home, where storms or peace preside,
As the winds bring?

Alas for human thought!
How does it flee existence, worn and old,
To wing companionship with beings wrought
Of finer mould!

'Tis vain the reckless waves
Join with loud revel the dim ages flown,
But keep each secret of their hidden caves
Dark and unknown.

THE clouds of night come rolling down. Darkness rests on the steeps of Cromla. The stars of the north arise over the rolling of Erin's waves: they shew their heads of fire through the flying mist of heaven. A distant wind roars in the wood. Silent and dark is the plain of death! Still on the dusky Lena arose in my ears the voice of Carril. He sung of the friends of our youth, the days of former years, when we met on the banks of Lego; when we sent round the joy of the shell. Cromla answered to his voice. The ghosts of those he sung came in their rustling winds. They were seen to bend with joy towards the sound of their praise!

Be thy soul blest, O Carril! in the midst of thy eddying winds. O that thou wouldst come to my hall, when I am alone by night! And thou dost come, my friend. I hear often thy light hand on my harp, when it hangs on the distant wall; and the feeble sound touches my ear. Why dost thou not speak to me in my grief, and tell when I shall behold my friends? But thou passest away in thy murmuring blast; the winds whistle through the gray hairs of Ossian!—*Ossian.*

Louis XV. when before the walls of Menin, in Flanders, was told that if he chose to risk an attack, the place would be taken four days sooner than it otherwise would be. "Let us take it then," replied he, "four days later. I would rather loose these four days than loose one of my subjects."

ITEMS OF NEWS.

Lisbon has fallen into the hands of Don Pedro with little opposition, and the flag of the juvenile Queen now waves over the ramparts of that city. It was taken possession of by the army on the 24th, and by the fleet on the 25th of July. Miguel is said to have fled to Spain, and the war may now be considered at an end.

The Irish Church Bill has passed the House of Lords. Wellington very unexpectedly voted in its favour. The Jew Bill has been negatived in the same House.

The British House of Commons have expressed their disapprobation of the conduct of Russia in denationalising Poland.

There has been a conspiracy against the life of the Russian Emperor by some Polish exiles who not long since left Paris, having bound themselves with an oath to accomplish his assassination. The sensation created by this event throughout Russia was very great, and every precaution was adopted for his protection.

The cholera has re-appeared in London and Paris. In the latter place, several melancholy cases have occurred.

It would seem that Athens is again to become the capital of Greece, and the seat of her king.

The volcanic islands thrown up two or three years since in the Mediterranean, near Sicily, and which afterwards disappeared, are again visible.

A new mineral has been recently discovered in Corsica; it contains particles of gold; and some vases that have been made from it, from the brilliancy of their polish and the beauty of their colors, resemble enamel.

The following extract of a letter of Ibrahim Pacha to the Turkish Sultan, will give our readers an idea of oriental style *as it is.*

"My sublime, magnanimous, awe-inspiring, mighty, great sovereign, our benefactor—the benefactor of mankind.

"May God grant to your Sublimity a life without end, and make the august shadow of your Sublimity a protection for all men, and especially for my humble head.

"Your inexhaustible goodness has induced you, most gracious sovereign, to grant me the government of Adano, as mahassilik, (in farm.)"

A letter from Campeachy of July 27th says:—"The cholera rages here with such fury, that the whole population of the State of Yucatan may be said to have been destroyed; and there are towns where ten inhabitants have not survived." The same letter also states that it is impossible to penetrate as far as Mexico, because the civil war rages to such an extent that the whole country is nothing but a vast field of battle.

A shock of an earthquake was felt on Tuesday morning of last week at Richmond, Fredericksburg, Alexandria, Washington, and Baltimore. At Richmond it lasted about six minutes.

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